

PATENT CLAIMS

1. Plug-in coupling for tubes, containing a base body (2) relative to which a tube end (60) can be fixed and which can be partially inserted into the tube end (14), furthermore containing a sealing element (8), a sleeve (4) that can be connected to said base body (2), and a retaining element (6) arranged in the interior of said sleeve (4) and retaining claws (12) for fixing said tube end (60), whereby an annular gap (10) is present between said base body (2) and said sleeve (4) for receiving said tube end (60),

characterized in that said retaining element (6) has a closed annular part (44) and is integrated and fixed therewith in said sleeve (4), in that said sleeve (4) radially within said retaining element (6) has a support body (34) with an exterior positioning surface (50) on which said resiliently elastic retaining elements (12) are supported, and in that said positioning surface (50) is arranged at a pre-determined angle (52) that opens to said anterior free sleeve end (14).

15 2. Plug-in coupling in accordance with claim 1, characterized in that said support body (34) is embodied as an annular shoulder, the exterior positioning surface (50) of which is embodied largely conical, and/or in that said support body

(34) is an integral component of said sleeve (4), in particular of an anterior sleeve part (30).

3. Plug-in coupling in accordance with claim 1 or 2, characterized in that said retaining claws (12) of said retaining element (6) are embodied in a scoop-shape and/or arched with respect to the longitudinal axis (24) and/or in that in the circumferential direction provided between adjacent retaining claws (12) is a recess (68) into which a radially interiorly disposed through-hole (70) opens that in the circumferential direction is embodied substantially smaller than the associated recess (68).

10 4. Plug-in coupling in accordance with any of claims 1 through 3, characterized in that said closed annular part (44) of said retaining element (6) is largely arranged in a plane that is orthogonal to the longitudinal axis (24) and in that said retaining claws (12) are arranged angled off in the area of an angling-off (66) of said retaining element (6) in the direction of the interior of the plug-in coupling.

15 5. Plug-in coupling in accordance with any of claims 1 through 4, characterized in that said sleeve (4) has two sleeve parts (30, 32), between which

said closed annular part (44) of said sleeve element (6) is arranged, and/or in that
said two sleeve parts (30, 32) are joined to one another in a material fit in
particular by means of a weld joint, and/or in that said sleeve (4) is a uniform
component in which said closed annular part (44) of said retaining element (6) is
fixed axially and radially immovable.

5

6. Plug-in coupling in accordance with any of claims 1 through 5,
characterized in that said retaining claws (12) have connected radially to said
annular part (44) a center part (74) and are provided with expansions (72) radially
further inward in the direction of the claw edge (38), usefully on both sides, and/or
in that said recesses (68) are arranged between adjacent center parts (74) and said
through-hole (70) is provided in the circumferential direction between said
expansions (72) of adjacent retaining elements (6), whereby said through-hole (70)
in the circumferential direction is embodied substantially smaller than the
associated recess (68).

10

15 7. Plug-in coupling, in particular in accordance with any of claims 1 through
6, whereby said sealing element (3) is preferably arranged in an annular groove
(86) of said base body (2), characterized in that an anteriorly disposed section (92)
of said sealing element (8) adjacent to the free end (18) of said base body (2) is

joined to said base body (2) by means of an adhesive connection (4), while a posterior section (96) of said sealing element (8) with respect to said base body (2) and in particular its annular groove (86) is movably arranged largely in the direction of said longitudinal axis (24).

5 8. Plug-in coupling in accordance with any of claims 1 through 7, characterized in that said angle (52) of said positioning surface (50) that opens to said anterior free sleeve end (14) is in the range between 20° to 45°, in particular between 25° to 40°, usefully between 28° to 35°, in particular between 30° to 33° to said longitudinal axis (24).

10 9. Plug-in coupling in accordance with any of claims 1 through 8, characterized in that a free space (56) is provided between said exterior positioning surface (50) of said support body (34) and an interior surface part (48) of said sleeve (4) that is arranged spaced radially outward therefrom and/or its posterior sleeve part (32), in which said retaining claws (12) can be moved and/or spread
15 when said tube end (60) is inserted.